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Compiling trade in goods and services statistics of Hong Kong using the change of ownership principle

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Summary

Hong Kong SAR, China has implemented the change in ownership principle in compiling statistics on goods sent abroad for processing and merchanting since 2012. Data are backcasted to earlier periods where such global production activities were notable. Their experience and challenges in measuring the activities in line with 2008 System of National Accounts and Balance of Payments Manual, 6th edition, are outlined in this paper.

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I. Introduction

1. In the Sixth Edition of the Balance of Payments and International Investment Position Manual (BPM6) and System of National Accounts 2008 (2008 SNA), the change of ownership principle is recommended for recording goods sent aboard for processing and merchanting. Implementing this principle will have significant impact on the trade in goods and services statistics of economies that engage in substantial amount of processing trade and merchanting activities. Hong Kong is one of those economies.

2. With extensive work done and solid foundation established, the Census and Statistics Department (C&SD) of Hong Kong formally implemented this new principle in compiling trade in goods and services statistics under the Balance of Payments (BoP) and Gross Domestic Product (GDP) compilation frameworks since September 2012.

3. During the implementation and development processes, the Department had been actively participating in international deliberations on this new development. A number of papers[1] presenting Hong Kong's experience in studying the impact and drawing up the implementation plan of this new principle had been discussed among the international statistical communities on different occasions. Also, statistical surveys had been enhanced and developed for collecting the additional source data required. These data not only support the implementation of the new principle, but also facilitate better understanding of the processing trade and merchanting activities of Hong Kong.

4. Building on the deliberations and materials discussed in previous papers, this paper summarises the development work in implementing the new principle in Hong Kong, and provides an updated analysis of the latest development of processing trade and merchanting activities of Hong Kong with reference to the new data collected in recent years.

II. Profile of processing trade and merchanting activities of Hong Kong before implementation of the new principle

5. Hong Kong is one of the most externally oriented economies in the world. In 2012, Hong Kong was ranked the 9th largest trading economy in the world in terms of total value of external merchandise trade. The ratio of Hong Kong's total merchandise trade value to its GDP was around 360% in 2013.

6. Trading activities related to goods sent abroad for processing and merchanting play a vital role in the external trade of Hong Kong. As early as in the 1980s, many manufacturing companies in Hong Kong started to relocate their production processes to Mainland China to take advantage of the geographical proximity and lower production cost there. Raw materials and semi-manufactures are transported to factories in Mainland China for processing and the processed goods are returned to Hong Kong for local consumption and / or re-exportation. During the 1990s, goods sent to Mainland China for processing and subsequently returned to Hong Kong have been the driving force of Hong Kong's trade

[1] Two papers were presented at the meetings of the IMF Committee on Balance of Payments Statistics (BOPCOM) in 2007 and 2008. Similar paper as the original version of the BOPCOM paper no. 07/20 was presented subsequently at the 2008 Conference of European Statisticians organised jointly by the United Nations Economic Commission for Europe and the United Nations Statistical Commission in June 2008 and the first meeting of the Organisation for Economic Cooperation and Development Working Party on International Trade in Goods and Trade in Services Statistics in September 2008. In 2012, a paper was prepared for the BOPCOM meeting.

with Mainland China, as evidenced by the increasing share of processing trade in Hong Kong's imports from Mainland China (Figure 1a) and lower growth rates of value of imports from Mainland China after excluding the value of the processed goods (Figure 1b) during that period.

Figure 1a
Share of processing trade in Hong Kong's imports from Mainland China

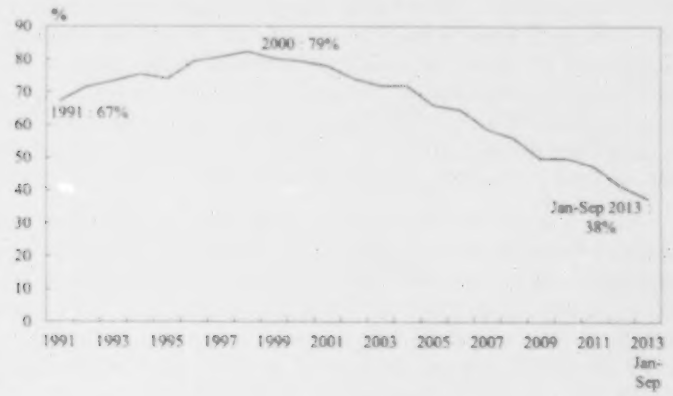
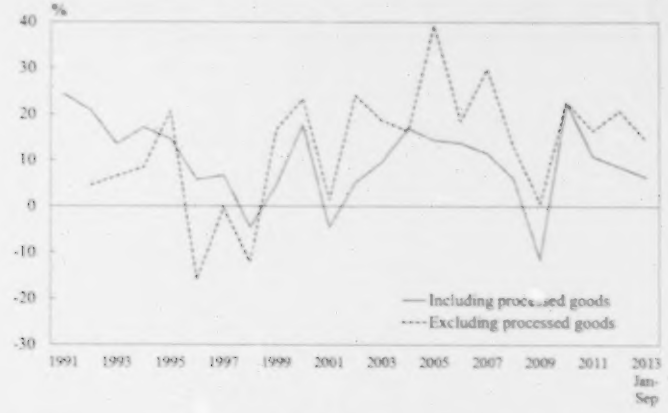


Figure 1b
Growth rates of value of imports from Mainland China



7. During the 2000s, structural changes in processing trade between Hong Kong and Mainland China started to take place. While imports of goods after processing in Mainland China continued to increase, the growth rates were milder compared with non-processing trade. As a result, the share of processed goods returned to Hong Kong in the total imports from Mainland China to Hong Kong declined, while the growth rates of value of imports from Mainland China after excluding the value of the processed goods became higher (Figures 1a and 1b). Latest survey data indicated that in 2013, about 40% of imports of goods from Mainland China were related to goods returned after processing, which fell significantly from the corresponding ratio of around 80% recorded in 2000.

8. New data collected for the implementation of the change of ownership principle provide insights into the driving forces of structural changes in processing trade between

Hong Kong and Mainland China. Of the goods sent to Mainland China for processing in 1990s, the majority was under the arrangement of "processing and assembling" (P&A)[2], in which the raw materials sent to Mainland China for processing and the finished output after processing remained to be the property of Hong Kong companies throughout, i.e. there was no change of ownership. The processed goods would normally be returned to Hong Kong for subsequent re-exportation to overseas markets. During the 2000s, processing arrangements were gradually shifted to "processing with imported materials" (PIM). Under the PIM arrangement, the ownership of the imported inputs is transferred to the processing units in Mainland China, and the processed goods might not be returned to Hong Kong. As a result of the shift from P&A to PIM arrangement, the volume of processed goods returned to Hong Kong registered only moderate increases in the 2000s as compared that in the 1990s. For the implementation of change of ownership principle, new data on processing trade under both P&A and PIM arrangements are collected. The new data also support analysis of the structural changes from P&A to PIM arrangements at broad industry level, which will further be discussed in paragraph 20 below.

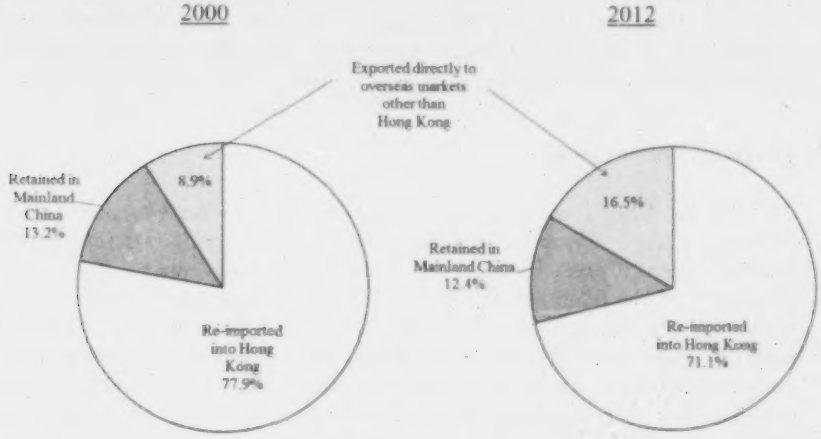
9. As for the disposal of processed goods, while re-importation into Hong Kong still remained as the major mode, its share (as a percentage of the value of raw materials/semi-manufactures sent to Mainland China for processing) had somewhat declined in the past decade or so, from 78% in 2000 to 71% in 2012 (Figure 2). On the other hand, the share of processed goods exported directly to overseas markets had gradually increased, from around 9% to 17% during the same period, along with the infrastructural development and improvement in logistics arrangements in Mainland China. Part of these goods are processed under the P&A arrangement, and hence should be recorded as exports of goods of Hong Kong instead of Mainland China under the change of ownership principle. Capturing of data related to this type of trade, viz. offshore trade activities involving outward processing, is discussed in paragraphs 16 - 18 below.

[2] According to Mainland China Customs' definitions, there are two types of inward processing trade, viz.: *processing and assembling* and *processing with imported materials*. *Processing and assembling* refers to the type of inward processing in Mainland China in which foreign suppliers provide all or part of the raw materials, parts or components under a contractual arrangement for the manufacture or assembling of products, which are for subsequent exportation from Mainland China by the foreign suppliers. Under this type of processing, the imported inputs and the finished outputs remain to be the property of the foreign suppliers throughout the whole process. *Processing with imported materials* refers to the type of inward processing in Mainland China in which the raw materials, parts and components are purchased with foreign currencies and imported by Mainland China's processing units for the manufacture of products or semi-manufactures, which are for subsequent exportation to foreign markets from Mainland China. Under this type of processing, the ownership of the imported inputs has been transferred to Mainland China's processing units. In compiling trade in goods and services statistics of Hong Kong under the new principle, adjustments are needed only for Hong Kong's outward processing in Mainland China under *processing and assembling* contracts.

Figure 2

Intention of final disposal of goods after processing in Mainland China

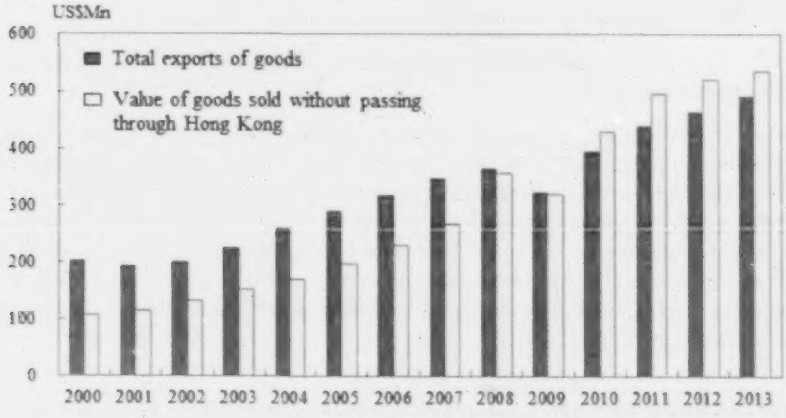
(as a percentage of the value of raw materials / semi-manufactures sent to Mainland China for processing)



10. On the other hand, merchanting activities undertaken by Hong Kong companies have prospered since the 2000s. Hong Kong traders engage in a substantial amount of merchanting activities to take advantage of their extensive trading network with buyers and sellers in the global market. The total value of goods sold without passing through Hong Kong amounted to US$535 billion in 2013, about 5 times the value in 2000. Also, the value had become higher than the overall value of total exports of goods of Hong Kong since 2010 (Figure 3).

Figure 3

Value of goods sold without passing through Hong Kong and exports of goods of Hong Kong



III. Implementation of the new principle in Hong Kong

11. Companies in Hong Kong typically undertake three types of processing trade and merchanting activities: (i) outward processing, (ii) merchanting, and (iii) offshore trade activities involving outward processing. The following paragraphs highlight the development of new statistical surveys for these three types of trade in recent years that underpinned the implementation of the new principle.

A. Outward processing

12. Hong Kong's outward processing activities are predominantly carried out in Mainland China. Given the importance of processing trade between Hong Kong and Mainland China, C&SD has long been conducting the Survey on Trade Involving Outward Processing in the Mainland of China (OP Survey) since late 1980s to capture data on outward processing activities. The OP Survey is conducted on a monthly sample of import / export trade declarations. While basic information regarding the sampled consignments (such as trade type, trade value, commodity type and market) can be collated from the trade declarations, the required information on outward processing is obtained by computer-assisted telephone interviews with the establishments concerned.

13. For the purpose of implementing the new principle, the OP Survey has been enhanced since the second quarter of 2008 to collect additional data in respect of the P&A contracts. Enhancements include collecting additional information on the following items pertaining to imports from Mainland China which involve outward processing of goods under the P&A arrangement:

(a) value of raw materials/semi-manufactures sent from Hong Kong to Mainland China;

(b) value of raw materials / semi-manufactures purchased and delivered directly from places other than Hong Kong to Mainland China;

(c) value of manufacturing services on physical inputs owned by Hong Kong, with the following breakdowns:

(i) processing fees paid by Hong Kong; and

(ii) raw materials/semi-manufactures procured directly by Mainland China's processing units.

14. To support the compilation of more detailed trade statistics under the change of ownership principle and the conduct of more in-depth trade analysis, the quarterly sample size of the OP Survey has been enlarged significantly (more than doubled) over the past several years. This has enabled the compilation of reliable estimates of the aforesaid additional breakdowns. To meet the timeliness requirement of GDP and BoP estimates, partial survey results and data models have been used to produce, at shorter time lag, preliminary estimates of goods related to outward processing trade at an aggregate level under the new principle.

B. Merchanting and offshore trade activities involving outward processing

15. Considering the significance of merchanting activities in Hong Kong's trade in services, C&SD has been collecting data related to merchanting activities via the Annual Survey of Imports and Exports of Services (ASIES) since the 1990s. Data on the sales of

goods and cost of goods sold under merchanting are regularly collected to compile the value of merchanting services provided by Hong Kong traders.

16. Offshore trade activities involving outward processing refer to trading activities in which goods are processed under P&A contracts, and subsequently sold to non-residents directly without the goods passing through Hong Kong. Under the previous treatment, the gross margin of offshore trade activities involving outward processing was recorded as trade in services. However, as the goods sold involve actual buying and selling activities (with a change of ownership), the new principle stipulates that sales of such goods should be recorded as trade in goods. The processing fee involved is to be recorded as import of manufacturing services on physical inputs owned by Hong Kong traders.

17. To meet the data requirements on merchanting arising from the new principle in a timely manner, C&SD has implemented a new Quarterly Survey of Merchanting and Other Trading Activities (QSMTA) since the first quarter of 2010. However, only aggregate data are collected to minimise respondent burden. More detailed data, e.g. the value of sales of goods under merchanting by broad commodity group and by country / territory, continue to be collected on an annual basis via the ASIES.

18. Apart from collecting the value of sales and cost of goods sold under merchanting, the new quarterly survey also collects additional data related to offshore trade activities involving outward processing, which cannot otherwise be collected from trade declarations or the OP Survey of which the reporting unit is based on trade declarations, as these goods do not cross the boundary of Hong Kong. The following additional data are collected on offshore trade activities involving outward processing activities via the QSMTA:

(a) value of goods sold offshore after processing;

(b) cost of goods sold offshore after processing, with further breakdowns into:

(i) value of raw materials / semi-manufactures sent from Hong Kong to the processing economy;

(ii) value of raw materials / semi-manufactures purchased and delivered directly from places other than Hong Kong to the processing economy;

(iii) value of manufacturing services on physical inputs owned by Hong Kong, with the following breakdowns:

- processing fees paid by Hong Kong; and
- raw materials / semi-manufactures procured directly by the processing units abroad.

19. On average, about 2 000 establishments are selected for enumeration in each survey round of QSMTA, of which 800 are certainty cases. These certainty cases have been identified to be very prominent in terms of trade in services or merchanting receipts, based on the survey returns in previous rounds of ASIES and QSMTA. The coverage of the QSMTA is reviewed on an annual basis to ensure a good representation of establishments engaged in merchanting and trade in services activities in the survey.

IV. Results of the enhanced and new surveys

A. Enhanced survey on outward processing

20. The enhanced OP Survey enables detailed analysis of the processing arrangements between Hong Kong and Mainland China. Firstly, as mentioned in paragraph 8 above, the

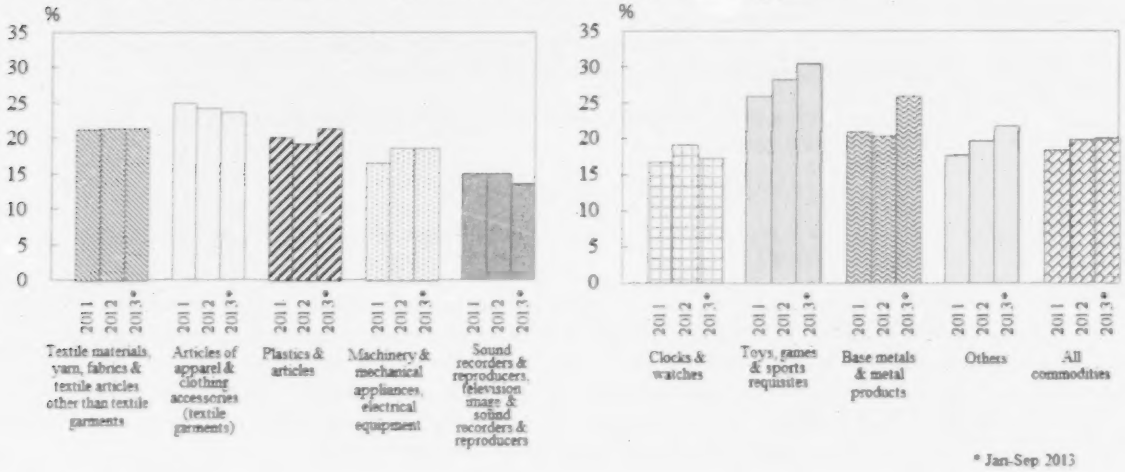
share of goods processed under the P&A arrangement in total imports from Mainland China has declined. Analysed by industry, for companies with significant amounts of processing trade and engaged in trading of electronic parts, P&A arrangement used to be the preferred mode of operation. In recent years, a shift to PIM arrangement has been observed. Similar pattern has also been observed for companies with significant amounts of processing trade and engaged in trading of fabrics. On the other hand, companies engaged in trading of jewellery and electrical goods have generally continued to rely more on P&A arrangement.

21. Secondly, the enhanced OP Survey provides new data for analysis of components of inputs consumed in the manufacturing process. In particular, the survey results showed that overall speaking, value of manufacturing services accounted for around 20% of the value of processed goods. The remaining 80% were raw materials/semi-manufactures procured by the Hong Kong traders for processing. Within this, around 70% were raw-materials / semi-manufactures sent from Hong Kong to Mainland China while 10% were raw-materials/semi-manufactures purchased and delivered directly from places other than Hong Kong to Mainland China.

22. When analysed by broad commodity group, for commodity groups (a) toys, games and sports requisites, and (b) base metals and metal products, the shares of value of manufacturing services in the value of processed goods were relatively high, at 30% and 26% respectively in early 2013. The higher shares were attributable to the larger labour input required. In addition, for toys, games and sports requisites, the greater amount of inputs of raw materials / semi-manufactures procured directly by the processing units abroad, being treated as part of the manufacturing services, also accounted for the higher share. On the other hand, for sound recorders and reproducers, television image and sound recorders and reproducers, the share of manufacturing services was just 14% in the value of processed goods in early 2013 (Figure 4).

Figure 4

Share of value of manufacturing services in the value of processed goods



* Jan-Sep 2013

B. New survey on merchanting and offshore trade activities involving outward processing

23. As discussed in paragraph 9 above, another form of processing has emerged, in which goods are sold offshore after processing, without returning to Hong Kong. This type of processing arrangement commonly takes place in manufacturing factories in Mainland China, Vietnam, etc. According to the QSMTA results, among all the goods sold offshore (i.e. goods sold and delivered to buyers without crossing the boundary of Hong Kong and hence cannot be captured under the customs system) in 2013, about 5% (in terms of sales value) were having P&A processing arrangement outside Hong Kong. The remaining 95% were goods sold under merchanting, i.e. goods bought and sold offshore without outward processing arrangement.

24. The QSMTA results also indicated that the trade margin for goods sold offshore after processing was higher than that for goods sold under merchanting (10% and 6% respectively in 2013). In 2013, of the cost of goods sold offshore under the P&A arrangement:

(a) around 40% was related to raw-materials / semi-manufactures sent from Hong Kong to the processing economy;

(b) around 30% was related to raw-materials / semi-manufactures purchased and delivered directly from places other than Hong Kong to the processing economy;

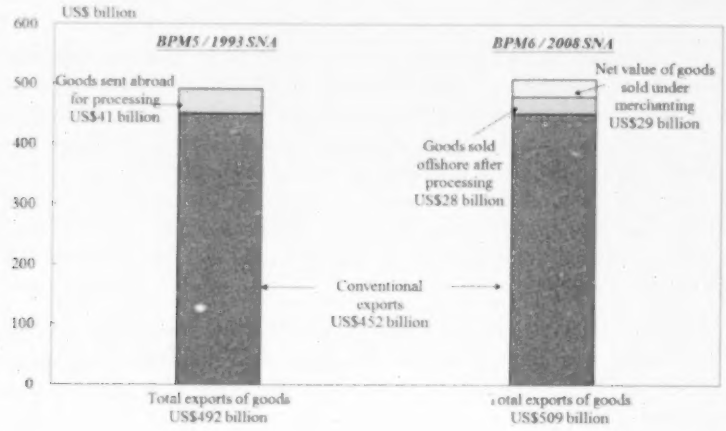
(c) around 30% was related to manufacturing services on physical inputs owned by Hong Kong, which include processing fees paid by Hong Kong and value of raw-materials / semi-manufactures procured directly by the processing units abroad.

V. Impact on trade in goods and services statistics of Hong Kong

25. The statistics compiled using the new principle are useful for the analysis of various aspects of globalisation in the international trade of Hong Kong. Based on the estimates for the reference year of 2013, the following paragraphs present some salient analyses of the impact of adopting the new principle on the trade in goods and services statistics of Hong Kong.

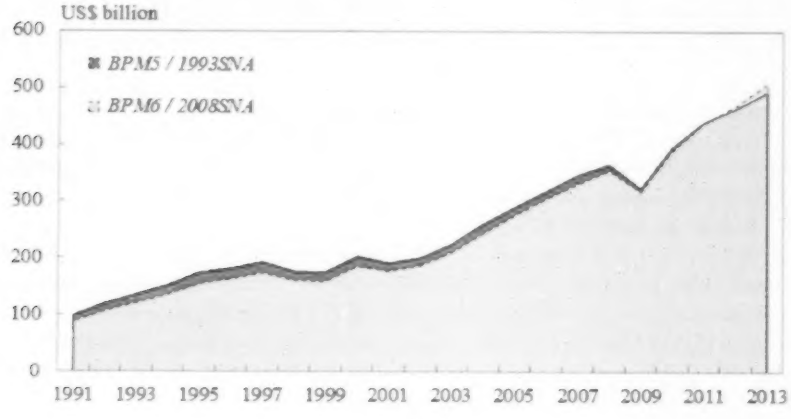
26. Trade in goods statistics compiled using the new principle can better reflect the genuine trade value of Hong Kong, irrespective of whether the goods traded pass through the boundary of Hong Kong. Under the change of ownership principle stipulated in *BPM6 / 2008 SNA*, exports of goods were estimated to be US$509 billion in 2013. Of the US$492 billion of exports of goods compiled using the old principle (based on *BPM5 / 1993 SNA*), US$41 billion of goods sent abroad for processing under P&A arrangement were excluded. The remaining US$452 billion represented conventional exports of goods (Figure 5). On the other hand, US$28 billion of goods sold offshore after processing and US$29 billion net value of goods sold under merchanting were added. As a result, the value of exports of goods in 2013 compiled using the new principle (US$509 billion) was higher than that compiled using the old principle.

Figure 5
Exports of goods compiled using the old and new principles, 2013



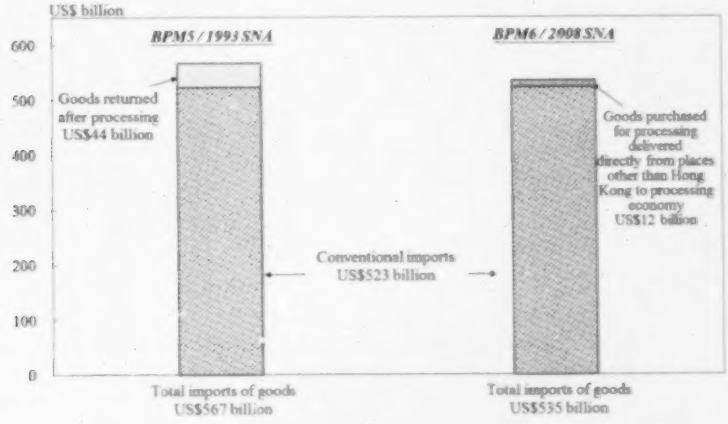
27. It is interesting to note that the value of exports of goods compiled using the new principle has become higher than that compiled using the old principle only since 2012 (Figure 6). Before that, the reverse was true, i.e. exports of goods compiled using the new principle had a smaller value. The gap narrowed gradually, from about 9% in 2000 to 2% in 2010, mainly because of moderation in the growth of goods sent abroad for processing caused by the structural shift from P&A to PIM arrangement as mentioned in paragraph 8. On the other hand, goods sold offshore after processing and the net value of goods sold under merchanting continued to prosper, which more than offset the decline in respect of goods sent abroad for processing under P&A arrangement.

Figure 6
Exports of goods compiled using the old and new principles



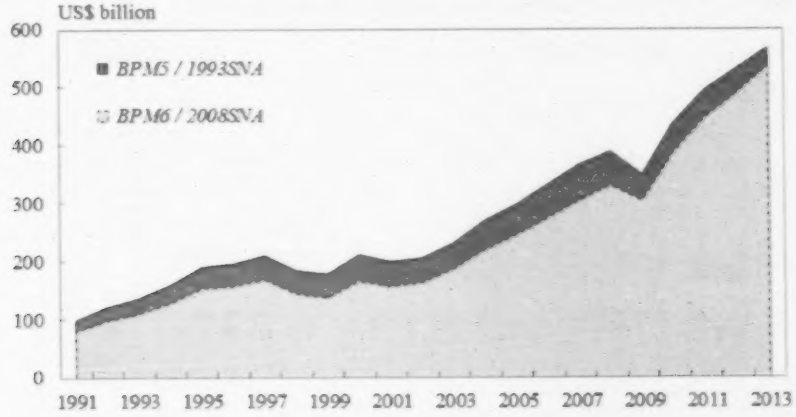
28. For imports of goods, the value compiled using the new principle amounted to US$535 billion in 2013, smaller than that using the old principle (US$567 billion). The new statistics reflect more closely the value of goods procured by Hong Kong traders for engaging in international trading activities, irrespective of whether the goods are actually imported into Hong Kong. The new statistics exclude goods returned to Hong Kong after processing in the processing economy (i.e. goods processing under P&A arrangement) (US$44 billion), but include raw materials / semi-manufactures purchased by Hong Kong companies and delivered directly from places other than Hong Kong to the processing economy (US$12 billion) (Figure 7).

Figure 7
Imports of goods compiled using the old and new principles, 2013



29. Similar to exports of goods, the discrepancies between the values of imports of goods compiled using the old and new principles were getting smaller as a result of the structural change from P&A to PIM arrangement (Figure 8). In 2000, the value of imports of goods compiled using the new principle was about 22% smaller than that compiled using the old principle. The gap was reduced to 12% in 2010 and further to 6% in 2013.

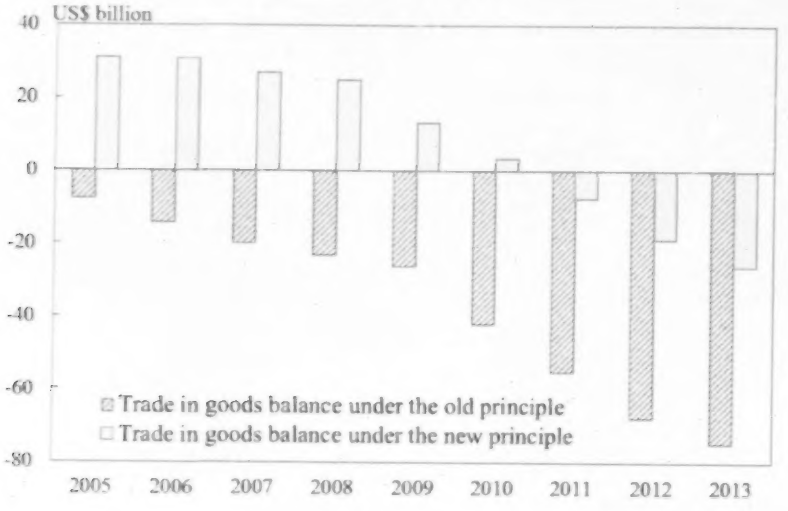
Figure 8
Imports of goods compiled using the old and new principles



30. After implementing the new principle, the balance of trade in goods of Hong Kong generally exhibited a structural change in past years (Figure 9). The trade in goods surplus recorded under the new principle before 2011 was largely due to the exclusion of trade in goods sent abroad for processing and the inclusion of the net value of goods sold under merchanting in exports of goods. Nevertheless, from 2011 onwards, the balance of trade in goods recorded a deficit under the new principle, which was mainly attributable to the rather buoyant import demand for supporting consumption and inbound tourism locally.

Figure 9

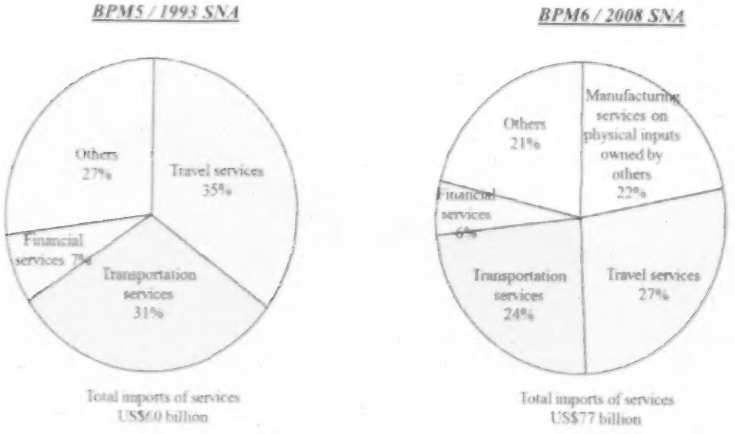
Balance of trade in goods compiled using the old and new principles



31. As regards trade in services, the statistics compiled using the new principle showed that Hong Kong imported a substantial amount of manufacturing services on physical inputs owned by Hong Kong companies in 2013, with an estimated value of US$17 billion. This accounted for 22% of total imports of services (US$77 billion) in 2013, and reflected Hong Kong's active involvement in the outward processing activities. The composition of imports of services in 2013 under the new and old principles is shown in Figure 10.

Figure 10

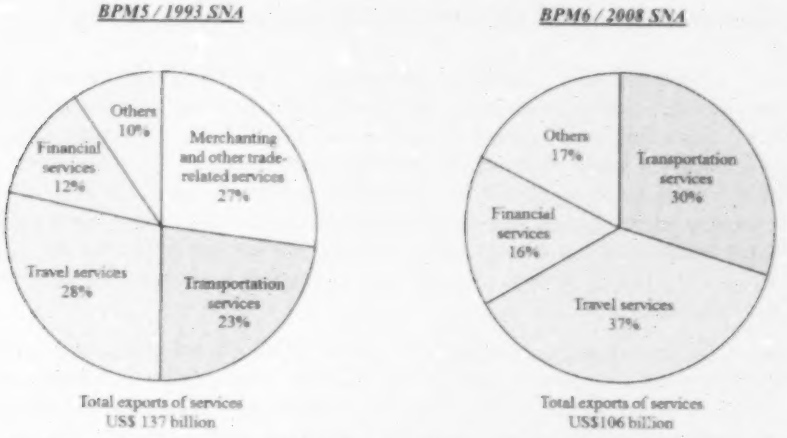
Imports of services compiled using the old and new principles, 2013



32. For exports of services, the gross margin of merchanting is taken out under the new principle, as merchanting is now recorded as trade in goods rather than trade in services. The total exports of services compiled using the new principle amounted to US$106 billion in 2013, with major components shown in Figure 11. In comparison, the total exports of services in 2013 compiled using the old principle stood at US$137 billion.

Figure 11

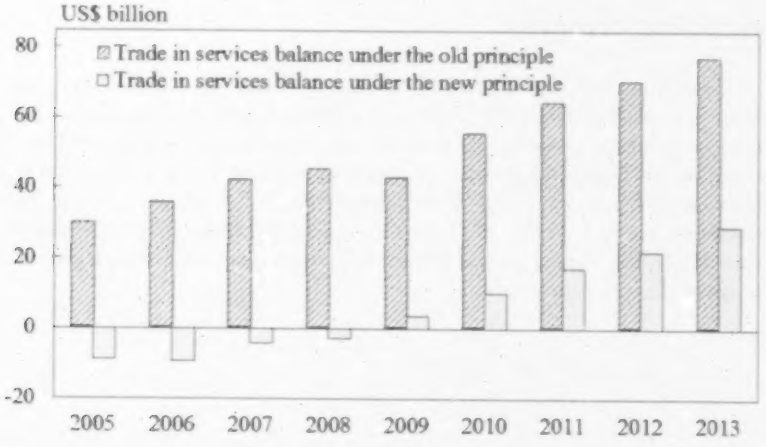
Exports of services compiled using the old and new principles, 2013



33. The implementation of the new principle generally changed the balance of trade in services of Hong Kong from surplus to deficit before 2009, due to the exclusion of exports of merchanting services and inclusion of imports of manufacturing services on physical inputs owned by others (Figure 12). Yet, from 2009 onwards, the balance of trade in services saw an increasing surplus, as imports of manufacturing services declined while exports of travel services and financial services grew significantly in those years.

Figure 12

Balance of trade in services compiled using the old and new principles



34. As the implementation of the new principle alone involves only the re-classification of components of trade in goods and services, the overall balance of trade of goods and services of Hong Kong remains unchanged, though the balance of trade in goods and the balance of trade in services both record significant changes individually as described above.

This implies that the levels and growth rates of overall GDP and the overall current account balance under BoP are not affected by the implementation of the new principle.

35. As for the estimation of volume measures of various components of trade in goods and services under the new principle, particularly processing fees paid to non-resident processing units and material inputs bought by non-resident processing units, reference is made to Mainland China's producer price indices of manufactured goods, broken down into raw material costs and processing fees.

VI. Dissemination of the new statistics in Hong Kong

36. To ensure users' correct understanding and applications of the trade in goods and services statistics compiled under the new principle, consultations and discussion sessions with major data users in both the public and private sectors of Hong Kong have been undertaken to solicit their views and suggestions regarding the introduction of the new principle in recording goods for processing and merchanting. While our major users generally appreciate and support the implementation of the new principle in the BoP and GDP compilation frameworks, some of them indicate preference for the provision of a transition period to allow them more time in adapting to the statistics compiled using the new principle.

37. In this connection, for the new trade in goods and trade in services components in GDP estimates, a special interim dissemination arrangement is adopted whereby the conventional trade statistics in the existing GDP framework continue to be published in the quarterly GDP report, while the new data series based on the change of ownership principle are presented as supplementary tables in the same report. Nevertheless, the overall GDP levels and growth rates remain unchanged under both the old and new presentation formats.

38. For BoP statistics, only the new trade in goods and services figures are presented in the quarterly BoP report, considering that analyses in the context of BoP often focus more on the balances of broad components in the current account (e.g. goods and services balance or current account balance, which will be the same under the old and new principles) and their relationships with the financial account.

VII. Concluding remarks

39. Hong Kong has implemented the change of ownership principle in compiling trade in goods and services statistics under the GDP and BoP frameworks. The new data captured in enhanced statistical surveys not only underpin the implementation of the new principle, but also support more detailed analysis of the processing trade and merchanting activities undertaken by Hong Kong companies. To ensure smooth transition in disseminating the new series of trade in goods and services statistics under the GDP framework, we will maintain close liaison with major users to promote greater awareness and usage of the new data series.

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